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Engineering Department

INTERDEPARTMENTAL COMMUNICATION

To: Planning Board

Date: October 20, 2016

From: Engineering Department

Subject: Roosevelt Drive – 17 Washington Drive – Residential Compound – Interim Construction

We have reviewed a letter from SLB Group, LLC dated October 18, 2016 regarding the drainage issue at 2 Jackson Drive. Please also find attached the following plans and material to help clarify this outstanding issue:

- Grading, Drainage & Paving Plan, GPR Associates, dated March 2014 last revised July 1, 2014
- Interim Construction Record Plan, GPR Associates, dated December 2015 last revised July 22, 2016
- Site Photographs, Engineering Department, September 19th & 22nd
- As-Built Drainage Calculations, GPR Associates, dated July 26, 2016
- Stormwater Rainfall events for September 15th and 19th 2016

According to the site engineer Bruce Ringwall, the initial flooding problem in January was caused by the land being cleared for the lots without erosion control measures having been put in place prior to the large storm. In addition to adding in the erosion control measures, Bruce made modifications to the drainage design to over-accommodate what was required in the original subdivision approval.

Because the modifications were significant, we asked Bruce on May 31 to provide an interim as-built plan and updated drainage calculations to demonstrate that the improvements will work. On September 1, Bruce provided the plan and calculations which we made available to Michelle Daniell and her engineer SLB. We have also inspected the subdivision on September 19th in the immediate aftermath of a significantly sized storm to judge the effectiveness of the design and found the drainage design working as it was intended and no flooding on 2 Jackson Drive. To ensure the pond was infiltrating stormwater as designed within 72 hours, we inspected it again three days later on September 22nd and found the detention pond empty. Please refer to the attached photographs. The detention pond was no more than a fraction full immediately after the storm. The southern portion of the pond, nearest to Lot 3A, was completely empty (near end of the photograph):



September 19th 3PM



September 22nd 9AM

2 Jackson Drive (September 19th 3PM):



Response to SLB Group Letter

In order to clarify and hopefully settle this issue for the board, I'd like to specifically comment on the letter from SLB Group. We agree with the cause of the issue and Bruce's recommendations as noted in the letter. The letter is accurate up until SLB's inspection of the rainstorm which did not occur on September 15th, as stated, but rather on the 19th. Clearly from the pictures provided, the

basin and swale did not “immediately” fill up nor did it take longer than 72 hours for the water to drain. Please refer to the following photo of the swale in question on September 19th:



It is unclear how SLB has come to the conclusion that the basin and swale have completely filled up during and after the storm without providing photographs. SLB was provided with the same as-built plan as our office was, which we found legible, showing the existing detention basin/topography and with as-built drainage calculations that show how large a storm the pond is capable of handling. According to Bruce's calculations, the detention basin is sized to retain a 100-year storm; a storm much larger than they were required to size the pond for during the subdivision process. They are merely required to size for a 10-year storm and “not cause significant flooding during [not larger] the 100-year event”. The pond is capable of retaining a 100-year storm and it has an overflow towards Washington Drive in the event of a storm greater than 100-years which, again, they are not required to provide. The detention basin has a maximum elevation of 265 and a 100-year storm will fill the basin to elevation 264.98.

SLB was given these calculations however, for whatever reason, it was not mentioned or referenced in their letter. SLB also states that they were unable to review the interim as-built plan provided by Bruce. Without SLB having reviewed the as-built plan or calculations they are merely speculating on what “potentially” could have happened in a bigger storm. Without providing alternate calculations or producing their own topographic survey of the property to counter Bruce's information, I fail to see how SLB has come to their conclusion regarding the adequacy of the drainage system.

Lastly, the comment in their letter regarding the neighbor's ignorance of their maintenance agreement is immaterial to this discussion. An Operation and Maintenance agreement was provided with the original subdivision application which is the only purview of the Planning Board. It is not an uncommon occurrence for new homeowners to be ignorant of their exact duties regarding maintenance of a private road.

The applicant is still required to provide a final as-built plan which I have instructed Bruce to provide more information than is typically shown on such a plan in order to resolve this problem. The Town is still holding the final release of the subdivision bond until this plan is completed. It is my expectation that the plan will confirm what we have already reviewed and inspected. The flooding issue was caused by the lack of erosion control at the start of construction however we believe the applicant has met their obligation to resolve the issue.